

ABSTRACT OF THE DISCLOSURE

A mullite composition is comprised substantially of mullite grains that are essentially chemically bound wherein the composition has at least two adjoining regions  
5 that have substantially different microstructures. The composition may be produced by forming a mixture of one or more precursor compounds having the elements present in mullite; shaping the mixture into a porous green shape applying a nucleation control agent to a portion of the  
10 porous green shape and then heating the porous green shape under an atmosphere and to a temperature sufficient to form the mullite composition.